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ABSTRACT

The unparalleled changes in recent years mean that a continuing focus on the preparation of young people for entry to the work force as the keystone of post-compulsory education and training in Australia is no longer sufficient for two reasons. First, technological change and other changes stemming from globalization of economies are now having a profound impact on the nature of work, the way it is organized, and the skills it requires. Second, the work forces of most countries, including that of Australia, are aging. These developments have implications for changes in Australia's approach to skill formation. The historical focus on the young in post-compulsory education and training policy is inadequate. The more recent trends, both in Australia and overseas, that recognize that these policies now need also to embrace the concept of lifelong learning. Although about 77 percent of the "economically active" population aged 15-64 years undertake some kind of education or training, much of this education or training is unstructured, informal, spasmodic, and minor. Australia has a comparatively high level of investment in education and training, but it is not among the countries with the very highest levels of commitment. Future directions must focus on the development of new learning pathways and an increased national investment in skills and knowledge. (Contains 69 references.) (YLB)

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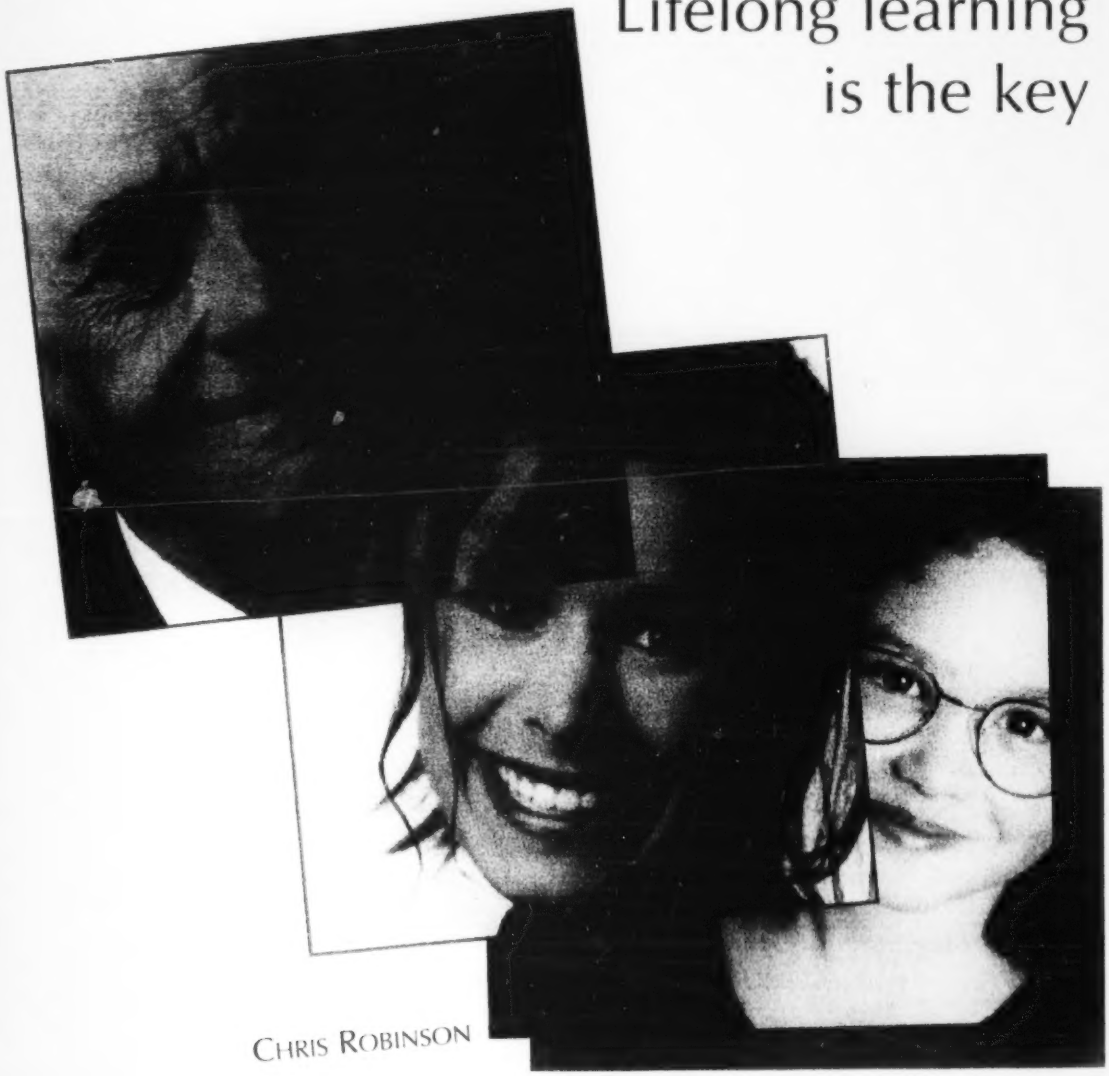

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Lifelong learning is the key

CHRIS ROBINSON

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Executive summary

THE TWENTIETH CENTURY has seen universal basic education (that is, compulsory schooling) become a reality in economically advanced countries. Education policies designed to eliminate illiteracy by making schooling available to all has been a key thrust in education policies across the whole world during the twentieth century.

The second half of the century has seen universal education and training being extended across the teenage years and into early adulthood. In many countries the focus has been on preparing young people for entry to the workforce, and on retaining young people in the formal education and training system for longer periods of time.

The unparalleled changes that have occurred in recent years mean that a continuing focus on the preparation of young people for entry to the workforce as the keystone of post-compulsory education and training will no longer be sufficient. There are two reasons for this. They are:

- First, on the demand side, technological change and other changes stemming from globalisation of economies around the world are now having a profound impact on the nature of work, the way it is organised and the skills it requires. These changes are now so rapid that people cannot expect to be working in the same areas even for a part of their working lifetimes. Many specific skills now have a very short 'half life'.
- Second, on the supply side, the workforces of most countries, including that of Australia, are ageing. There will be relatively fewer young people entering the workforce than in the past. Skill formation policies will therefore need to be more heavily focussed on the adult workforce than in the past, and include reskilling older workers. Continuous learning is required.

If Australia is to maximise its economic potential, policies to further promote lifelong learning are the key direction for the future. The onset of the information age and the knowledge-based economy requires countries to become learning societies. The education of the population and the skilling of the workforce are the factors which are going to determine a nation's fortunes in the twenty-first century much more than they have in the twentieth century. The skills base of a nation, and the speed with which skilling can adjust to meet new requirements will be as important, if not more important, in determining economic success than a nation's natural resources and financial capital base. These changes will

not be achieved without further significant reform to our education and training systems.

This is not to say that Australia has not already made substantial progress. Some 1.5 million people (or some 12 % of the 15–64-year-old population) enrol in a publicly funded vocational education and training program each year. A further 670 000 people are enrolled in higher education (that is, 5.4 % of the population aged 15–64 years). Some 80 per cent of wage and salary earners report having undertaken some kind of employer-provided training. A total of around 77 per cent of the 'economically active' population aged 15–64 years, undertook some kind of education or training during 1997 in Australia.

Impressive as this looks, much of this education and training activity is unstructured, informal, spasmodic and minor. A more comprehensive system of lifelong learning in Australia is required. Future directions will need to focus on:

- the development of *new learning pathways* for adults as well as young people so that lifelong learning for all can become a reality. This will require a substantial reform to the post-compulsory education and training system to ensure a wider range of appropriate learning options are available
- an *increased national investment* in skills and knowledge. Even though successive governments in Australia have ensured that we have a comparatively sound level of national investment in education and training, it is difficult to see how we can become a world leading skills nation, as we must, without raising national investment further, not just public sources, but from private sources also.

1 Introduction

THE CHANGES THAT we have experienced in the workforce, the economy and in our society have been rapid in the closing decades of the twentieth century. To date the main focus in the post-compulsory education and training system in Australia has been on how adequately it has been able to prepare young people for the world of work.

In this report, developments in the changing nature of work and demographic structure of the population are examined in terms of what implications they might have for changes in Australia's approach to skill formation.

Skill formation developments in Australia are then considered, particularly in terms of the key developments which have occurred in recent years. The historical focus on the young in post-compulsory education and training policy is examined. The more recent trends, both in Australia and overseas, which recognise that these policies now need also to embrace the concept of lifelong learning, are explored, along with the question of the extent to which Australians are currently lifelong learners. The adequacy of Australia's investment in education and training is also examined.

Some possible strategies to better meet our emerging skill requirements are also considered.

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2 Forces shaping national skills requirements

2.1 The changing nature of work

THE LATTER PART of the twentieth century has seen the rise of the *information economy* or the *knowledge-based economy*. There has been a significant amount of international literature on the subject of globalisation, structured and technological change and the emergence of the information or knowledge-based economy (see, for example, OECD 1996a; Boisot 1998; and Carnoy et al. 1993).

Drucker (1993) argued that:

> *Knowledge is the only meaningful resource today. The traditional factors of production—land, labour and capital—have not disappeared, but they have become secondary. They can be obtained and obtained easily, providing there is knowledge.* (p.38)

The impact of these developments is perhaps best described by Reich (1989) in a fascinating piece called 'Dick and Jane meet in the next economy' (a chapter in his book, *The resurgent liberal and other unfashionable prophecies*). Here he examined the transformation of advanced economies which is taking place from the *old economy* to a *new economy*. He argued that the 'old economy' was characterised by high-volume, standardised production with large numbers of identical items being produced over long production runs. A few people at the top made all the decisions with management being backed up by professional experts such as bankers, accountants and engineers. Everyone else was expected to follow the orders set by management according to the requirements of stable and reliable production systems. These methods of production required rigid work rules and job classifications. In this 'old economy' most education and training is geared to implementation of instructions and specialised training in job tasks. Reich argued that this 'old economy' in the older industrialised economies is rapidly becoming (or already has become) obsolete. He argued:

> *As the production of commodities shifts to other parties, America's competitive advantage correspondingly must shift toward work the value of which is based more on quality, flexibility, precision and specialisation.* (Reich 1989, p.98)

Reich noted that the 'new economy' poses a dichotomy for older industrialised economies—cut wages to match those of emerging industrial

economies elsewhere or compete on the basis of how quickly and well they can transform ideas into better goods and services. He argued:

> *Both paths can improve competitiveness in the short run, but only the second can maintain and improve living standards over time.* (Reich 1989, p.99)

In the 'new economy', labour's value is increased. A workforce capable of rapid learning and innovation is critical. Continuous retraining for more complex work and the transfer of high-level skills gained in the workplace context needs to be underpinned by attitudes and learning skills gained in the education system prior to entry to the workforce.

Reich argued that skills such as working effectively in groups, working co-operatively with and through other people and being able to analyse problems and develop solutions are paramount in the 'new economy'. He concluded:

> *It is not enough to produce a cadre of young people with specialised skills. If our enterprises are to be the scenes of collective entrepreneurship—as they must be—experts must have the ability to share their skills broadly and transform them into organisational achievement and others must be prepared to learn from them.* (Reich 1989, p.103)

These issues have also been of increasing interest in Australia in recent years.

Maglen (1994) and Maglen and Shah (1999) have examined changes in the nature of employment in Australia arising from globalisation and rapid technological change. They conclude, perhaps rather too pessimistically, that:

> *In broad terms the impact on employment in Australia of globalisation of the world economy, and of Australia's increased exposure to it and of the attendant rapid technological change and organisational restructuring, has been more negative than positive.* (Maglen & Shah 1999, p.43)

To back this up they point to:

- the relative low employment growth in the past decade, particularly in full-time employment
- the polarisation of attachment to the labour force with a significant growth in the number of hours worked by full-time workers and at the same time the strong growth in the number required to work fewer hours
- the crisis in male employment, particularly in full-time employment with female employment being the winner, albeit still in relatively few industries and very often part-time work

Furthermore, they argue that these changes are so profound that a restructuring of how jobs are classified is required to better reflect the new nature of work. The three broad categories they propose based on those put forward by Reich (1991) are:

- *symbolic analytical services* which are focussed on problem-solving and strategic forms of work. This is a growing and most highly skilled area of work. Moreover, these services are the most globally traded

- *in-person services* which include all those occupations which are in direct contact with the ultimate beneficiaries of their work. These services are also growing strongly but are rarely traded globally
- *routine production services* which entail work that is repetitive, this being the type of work that is in decline in the economy. These are the services which are transferred from high labour cost to lower labour cost economies, and are then the most precarious of the three groups

Maglen and Shah (1999) concluded that these developments have profound implications for the university and vocational education and training sectors if the new skills required in Australia are to be world's best practice. While their prognosis of recent economic developments may be overly pessimistic, the thrust of the argument relating to the nature of the changes in job and skills should not be ignored.

Similarly Hobart (1999, p.42), in reviewing the impact of globalisation of vocational education and training in Australia, concluded that 'The new competitive framework requires a broader set of skills; "hard" (technical) and "soft" (interpersonal and communication)'.

Sheldrake (1997) recently made some similar observations. He argued we are facing two extremely important changes in the global economic system—these being the increasing dominance of the free market capitalist system around the world and an extraordinary increase in the rate at which new products and services are coming onto the market. He likens the current 'knowledge revolution' arising from rapid technological change in the late twentieth century to being as profound for the way economies and work are organised as was the Industrial Revolution in its day.

From all this, Sheldrake (1997) suggested that the skills of the future put forward in the report of the Australian Government's Industry Task Force on Leadership and Management Skills, *Enterprising nation*, are a useful starting point for consideration of our future skill requirements. At the very least Sheldrake (1997, p.6) argued that they might include:

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- considerably enhanced *people skills*, especially in team leadership, communication, enabling, consulting with others and coaching
- *strategic skills* in developing businesses that take account of the increasing importance of knowledge as a factor (the factor) in competitive success
- *conceptual skills*, particularly those that enhance the ability to see issues from a variety of viewpoints, manage ambiguity and understand the complexities of other cultures' values and priorities
- the ability to *empower others*, to be able to manage through dialogue and interpersonal negotiation rather than through power and control
- the capacity to recognise that *learning is an ongoing process*, and to continuously rethink and re-examine approaches to work and other fundamental issues

Sheldrake (1997) continued and noted that, in framing our educational and training strategies to prepare people for the world of work:

> *We are in danger of training the spinners and weavers of the 21st century: another generation of highly trained people who will not be able to apply their specific skills to anything. Moreover, just as then, we have no idea where the current process of change is leading: the only thing that can be said with any confidence about* [the] *vast number of books written about the future in recent years is that most of what most of them say will be wrong … the skills that are likely to be the most important over the next thirty years are likely to be generic skills. They will include the ability to reason, collect, assess and organise information, to prepare and deliver presentations that are well researched and analysed, and so on. Perhaps a better description of these skills would be 'generalist' skills.* (Sheldrake 1997, p.8)

Research on the topic of the changing nature and patterns of work and its implications for vocational education and training was recently undertaken by Waterhouse et al. (1999). The study is detailed and covers a lot of material. In a nutshell they conclude that there have been fundamental changes to patterns of working that critically affect learning, yet education and training systems have not managed to keep pace with them. They stress the need for diversity, flexibility and greater customisation of education and training as the key response. In relation to training packages within the VET sector they proposed a critical shift:

> *from a focus on predetermined contact delivery to an emphasis on effective dialogue with the stakeholders on designs for effective learning.*
>
> (Waterhouse et al. 1999, p.3)

In terms of new directions, the implications of the review of the literature by Waterhouse et al. (1999) indicate that there are three key areas that require much more emphasis in the future. These are:

- the need to develop *learning communities*, rather than just focussing on the education and training of individuals
- the need to develop *collective learning*, stressing group competencies, skills and knowledge, rather than persisting solely with the conventional focus of education and training systems on the individual
- the need to develop more *strategic and effective approaches to workplace learning*

A study by Marginson (2000) also examined the changing nature of and organisation of work and the possible implications for the education and training systems in Australia. Marginson identified six key elements currently driving the changing work environment. These are:

- *globalisation* which is creating a more international economy and culture
- *increased international competition* which is driving an accelerated rate of technological change, particularly in the information and communications technologies, which are now the key sources of productivity increases
- *rapid technological change* which is leading to declines in 'blue collar work' and increases in skilled 'white collar work', with little or no increases in jobs overall
- *immense but uneven organisation change* in workplaces, where workplaces based on higher worker participation in teams and integrated multi-skilled jobs are tending to make the greatest gains in productivity

- *sharp increases in non-standard forms of work* such as in part-time, casual, outsourced or home-based work
- a *growing polarisation in incomes and in access to work, job security and technology* which is leading to more two-income families on the one hand, and more 'no-income families' (that is, apart from welfare and the most marginal employment income) on the other

Marginson argued that these developments have some fundamental implications for the way we need to think about education and training policies. This includes the need:

- to become *totally engaged with the global environment* or face obsolescence
- for workers to develop *higher levels of cognitive and interactive skills*
- for skills' formation aimed at the closer integration of work practices into 'the innovation cycle', with much more emphasis on the *skills needed for continuous innovation*
- for education and training practitioners in every industry to become *more global, better networked and closer to the technological edge*
- for education and training policy and interventions by governments, to reflect *the emerging polarisation of access to employment* and the skills' formation that goes with it

A major study by Vanden Heuvel and Wooden (1999) examined the implications of casualisation and outsourcing in Australia on work-related education and training. They found that:

- Over one-quarter of all wage and salary earners in Australia are now employed on a casual basis, this proportion having risen by 11 percentage points between 1984 and 1998.
- Although data are limited, estimates of the extent of outsourcing in the Australian labour market range from 4.2 to 10.3 per cent of workers.
- Permanent workers are more than twice as likely as casual employees to have participated in in-house training provided by their employer, and they are also more likely to have participated in employer-supported external training.
- Permanent workers are nearly five times more likely to undertake employer-supported external training.
- Casual workers are nearly 50 per cent more likely than permanent workers to have undertaken self-funded education and training, and casual employees actually spend more hours than permanent workers in external training.
- Despite concerns that firms using outside contractors may be doing so to substitute the use of contractors for in-house training, no evidence was found to support this proposition.

Vanden Heuvel and Wooden went on to say:

> *Indeed, if anything, analyses of various data sources indicate that (permanent) employees in firms which made greater use of outsourced labour were more likely to have participated in training.* (1999, p.3)

Clearly, however, the greater incidence of casualisation and outsourcing in the Australian labour market is leading to a shift for the responsibility of skills' formation from employers to individuals.

Hall and Bretherton (forthcoming) are examining the issue of the growth in 'non-standard' employment and its impact on vocational education and training in Australia. Non-standard employment includes all forms of employment other than permanent full-time ('standard') employment. This covers casual, part-time and seasonal employment, as well as a variety of labour outsourcing/labour hire forms of employment organisation. The study shows that standard employment can no longer be considered the norm, yet our education and training systems have not sufficiently adapted to reflect the different learning needs that this implies.

In the Australian context, interest in these issues in recent years was crystallised with the release of the Mayer report (Mayer 1992) which proposed that Australia's education and training system incorporate learning in generic competencies in addition to the conventional subject, area or discipline-based approaches to curricula. These seven key competencies are:

- collecting, analysing and organising information
- communicating ideas and information
- planning and organising activities
- working with others in teams
- using mathematical ideas and techniques
- solving problems
- using technology

The rationale for this was that increasingly, workplaces are valuing the generic skills needed to be effective in the information/knowledge age, rather than simply focussing on the knowledge itself. Skills relating to knowing how to handle and use knowledge are critical in those areas of the workforce where the knowledge itself is changing so rapidly.

Research on how the key competencies have been integrated into education and training was done by Hager et al. (1997). They identified six core principles for integrating generic competencies into education and training systems. The principles are:

- Key competencies can be learnt and should be taught.
- Key competencies are overlapping and interrelated, rather than being the discrete processes with three clearly identifiable performance levels (as conceptualised by Mayer).
- Key competencies should be viewed as both outcomes and processes (involving enabling or underpinning knowledge) necessary for more complex learning tasks and work performance.
- Key competencies must be contextualised in authentic or simulated environments.

- Key competencies should be integrated explicitly and systematically with technical competencies within all phases of the education/training cycle.
- Key competencies are developed throughout life and have lifelong relevance.

Moy (1999) has extensively reviewed the Australian research on the impact of generic competencies on workplace performance since Mayer. She has found that key competencies are not simply a 'passing fad'; rather, they are part of an international trend in which generic skills are viewed as being essential for work and life.

This discussion serves to emphasise that the nature of work is changing so rapidly that the education and training approaches needed to prepare people for work of previous generations—those which served us well for most of the twentieth century—will not, without further reform, continue to meet our needs in the twenty-first century.

The world is changing rapidly these days. Globalisation of economies and rapid technological change critically affect all countries. Education and training systems worldwide have experienced difficulties in keeping up with the pace of change; yet it is vital that they do so. Some of the key technical skills we will need in 20 years time do not yet exist, a situation which poses tremendous problems and challenges for the provision of education and training.

It is becoming increasingly apparent that many more workers in the new millennium will need:

- excellent *interpersonal* and *human relations'* skills to get the best out of people and work well in team-working situations
- critical *analytical* and *interpretive* skills in order to handle and make sense of the enormous amount of information now available
- to be *entrepreneurial* and *enterprising*, irrespective of whether they run a business or work for others as an employee, so that new business opportunities are always being sought

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These skills will be just as important as any technical, para-professional or professional skills people hold.

Developing this more diverse range of skills will require new responses from our education and training systems.

2.2 The demographic imperative

The other factor which is critically important in determining a nation's skill development needs is the changes in the demographic structure of the population. The nature of changes in the population will have a very major effect on the need to overhaul the provision of education and training.

Australia, like most Organisation for Economic Co-operation and Development (OECD) countries, has experienced an ageing of its population. The proportion of young people in the Australian population has been falling steadily and significantly over a long period of time with reductions in birth rates,

increases in longevity and reductions in net immigration. For instance in 1970, some 46 per cent of the Australian population was under the age of 25 years. Today that proportion is just 35 per cent. There has been a corresponding significant rise in the proportion of people aged 45 years and over, from 28 per cent in 1970 to 34 per cent by 1998.

As can be seen from table 1, the proportion of young people will fall even further in the coming years if current birth, mortality and net migration trends continue. Furthermore, the ageing of the Australian population will occur at an even faster rate than in the past. For instance:

- The proportion of the population aged under 25 years will fall from 35 per cent today to 30 per cent by 2020.
- The proportion in the older-age category (45 years and over) will consequently rise from 34 per cent today to some 44 per cent by 2020.

Table 1: Demographic trends and projections, Australia, 1970–2020

Age cohort	Proportion of total population (%)						
	Actual[a]				Projected		
	1970	*1980*	*1990*	*1999*	*1999–2000*	*2009–2010*	*2019–2020*
0–14 years	28.8	25.3	21.9	20.6	20.6	18.7	17.6
15–19 years	8.9	8.9	8.2	7.0	7.1	6.7	6.1
20–24 years	8.6	8.6	8.0	7.3	6.9	6.8	6.4
25–44 years	25.3	28.2	31.6	30.8	30.5	27.8	26.3
45–64 years	20.0	19.3	19.1	21.8	22.7	26.2	26.1
65 years and over	8.3	9.6	11.2	12.2	12.3	13.7	17.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total number in population (million)	**12.6**	**14.7**	**17.1**	**18.8**	**19.1**	**20.8**	**22.3**

(a) As at June of each year.

Sources: Australian Bureau of Statistics, various issues, *Estimated resident population: By sex and age, States and Territories of Australia*, Catalogue No. 3201.0, Canberra, and population projections obtained using the demographic model of the ECONTECH MM2 model

The implications of these changes are that the number of 15–24-year-olds in Australia is likely to remain at around 2.7 million over the next two decades, even though the total population is likely to grow by nearly 20 per cent overall over the same period.

On the other hand, the number of people in Australia aged 45–64 years is forecast to grow over 40 per cent over the next two decades from just over 4 million today to some 5.8 million by the year 2020.

This dramatic shift in the structure of the Australian population means that Australia's education and training system needs to put as much focus on the learning needs of adults as it does on young people. Post-compulsory education

and training policy needs to expand its 'sights' well beyond entry-level education and training and much more towards the learning/reskilling needs of older Australians. Of course, entry-level education and training will remain just as important in the future as it is today. The point is that an enhanced national skill formation system will be required, one which focuses on the learning and skills of the entire population.

3 Skill formation developments

3.1 The focus on young people

THROUGHOUT THE TWENTIETH century in Australia, the focus in post-compulsory education and training has been on young people. The issues that have been most prominent in deliberations about post-compulsory education and training policy in the past 20–30 years have centred on:

- measures aimed at raising the levels of participation and retention in all forms of formal education and training beyond the compulsory years of schooling
- better preparation of young people for entry into the labour market
- developing new pathways and improving the processes of transition from school and other forms of education and training to the workforce

This focus was fuelled by two key concerns. These were:

- a growing concern over the rapid deterioration in the labour market prospects of young people during the 1970s; for example, teenage unemployment rose from just 3 per cent in 1970 to over 20 per cent by the early 1980s. The unemployment rate of 20–24-year-olds also rose dramatically from around 1.5 per cent in 1970 to over 14 per cent by the early 1980s
- a rapid increase in the numbers of young people entering the labour market, a trend which started in the 1960s as a result of the post-war baby boom. Almost half of the Australian population was under 25 years of age in the late 1960s and early 1970s, a far higher proportion than today (see table 1)

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Most particularly during the 1970s and 1980s, these concerns led successive governments to instigate and act on the recommendations of a number of inquiries that were instrumental in expanding the education and training opportunities for young people beyond the compulsory years of schooling.

Key developments during the 1970s included:

- the Kangan report which led to establishment of the modern technical and further education (TAFE) system, which has as one of its key aims, the expansion of entry-level training opportunities beyond the traditional apprenticeship system (Kangan 1975)
- a number of decisions taken by the Australian Government in the early-to-mid-1970s to expand Australia's university system, with a particular focus on significantly increasing the number of university places for young people

- the Williams report which examined how to further expand the initiative of post-compulsory education and training opportunities, with a particular focus on transition to work (Williams 1979)

By the 1980s, despite the increased opportunities for young people arising from the initiatives of the 1970s, concerns about young people continued to dominate the post-compulsory education and training policy debate in Australia. In referring to the policy environment in the early 1980s, Robinson (1999a) observed:

> *There was a focus on two key issues concerning young people. Firstly, the deterioration in the labour market prospects of young people and secondly, a view that enhanced opportunities in education in general, and vocational education in particular, could play an important role in alleviating their deteriorating labour market situation.* (p.36)

Against this backdrop, the Commonwealth Tertiary Education Commission (1982) and the Kirby Inquiry (Kirby 1985) made recommendations designed to further expand opportunities for young people. In particular Kirby recommended the establishment of the Australian Traineeship System in order to increase rapidly the number of structured training opportunities for this group of people. This proposal was adopted by governments with the intention of providing a greater range of training which combined work and formal study, specifically in those areas of the labour market beyond the coverage of the traditional apprenticeship system.

It was also in the early 1980s that the Commonwealth Government and State/Territory governments commenced a concerted national effort to dramatically raise the rates of retention to Year 12 in Australian schools.

In the late 1980s a renewed emphasis was given to the higher education system with the release of the green and white papers on higher education (see Commonwealth of Australia 1987a; Commonwealth of Australia 1988).

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The main reforms proposed and implemented as a result of the higher education green and white papers were:

- the introduction of new financing arrangements involving contributions from users through the establishment of the Higher Education Contribution Scheme (HECS)
- the abolition of the binary system of two tiers of higher education institutions—universities and colleges of advanced education—and its replacement with a unified system of diverse university-level higher education institutions
- the rapid expansion—by more than 50 per cent in just five years—of the number of higher education places available particularly for young people

The focus on young people in post-compulsory education and training so prevalent throughout the 1970s and 1980s, continued into the early 1990s. The Finn report on post-compulsory education and training in Australia 1991 was a very significant document. Finn made a number of recommendations aimed at

increasing the participation and attainment of young people in all forms of post-compulsory education and training in Australia. He argued that:

> *There is an increasing realisation internationally that the most successful forms of work organisation are those which encourage people to be multi-skilled, creative and adaptable. At the same time, schools are broadening their programs and curriculums to offer greater access to vocational education for the increasing proportion of young people staying on past the end of compulsory schooling ... The Committee believes that these imperatives should be recognised in the establishment of a set of new national targets for post-compulsory education and training which encompasses schools, higher education, TAFE and other training ... In essence, the Committee believes that almost all young people should take sufficient post-compulsory education and training to complete Year 12 or some other initial post-school qualification, and at least half should go onto higher levels.* (Finn 1991, p.ix)

Australian governments—Commonwealth , State and Territory—subsequently set national targets (known as the Finn Targets) in response to the recommendations made by Finn. These are:

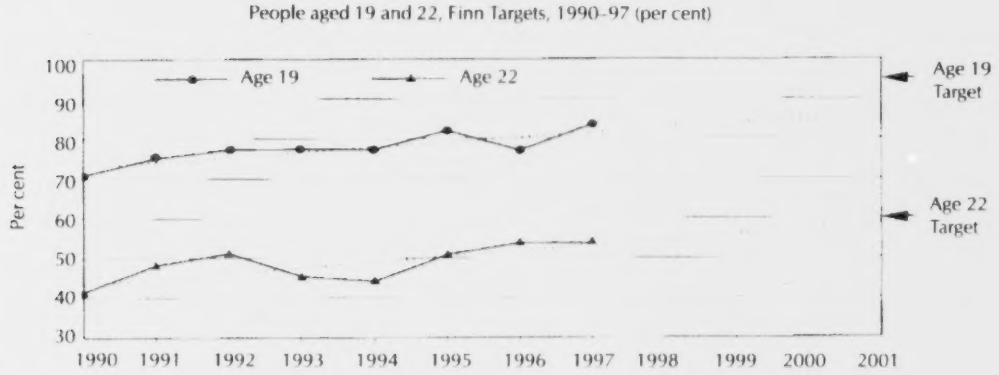
- Target One: By 2001, 95 per cent of 19-year-olds will either:
  - participate in Year 12
  - have completed Year 12
  - have completed Year 10 or 11 and are participating in some formally recognised education and training
  - have completed Year 10 or 11 and have completed some formally recognised education and training
- Target Two: By 2001, 60 per cent of 22-year-olds will either:
  - participate in education and training programs which lead to Level 3 awards or higher, such as in programs leading to degrees and diplomas
  - have attained Level 3 qualifications
  - have attained above Level 3 qualifications such as diplomas, degrees etc.

The effects of these policies on young people have been the subject of a number of studies recently. (For example, see Dusseldorp Skills Forum [1998], [1999]; Ainley [1998]; Ball & Robinson [1998], Marginson [1998]; Misko [1999].) The key findings of this research are:

- There have been substantial and significant improvements to the opportunities available for young people to participate in a wider range of education and training experiences in the past three decades.
- In the 1990s the retention rates to Year 12 in schools have begun to fall and the rate of growth in growth of places for young people in VET and higher education has begun to abate in comparison to the levels of growth achieved in the 1980s.
- Although the gains in post-compulsory education and training opportunities for young people have been very substantial, they have not been sufficient to offset the deteriorating labour market situation for some groups of young people (that is, the most disadvantaged groups of young people).

The situation is perhaps best summed up by examining progress towards the Finn Targets.

Figure 1: Participation and attainment in post-compulsory education and training, 1991–97



Source: ANTA (1998a, p.28)

Participation and attainment for 22-year-olds is increasing in line with the Finn Target for 22-year-olds. However, if current trends continue in the downturn in the participation and attainment by 18-year-olds (mainly due to recent declines in Year 12 retention rates), then the Finn Target for 19-year-olds in 2001 will not be met.

3.2 The recognition of lifelong learning

In recent years we have seen much greater focus on the concept of lifelong learning as a key driver of skills' formation policies. This increased interest has occurred internationally as well as in Australia, and has evolved from notions that were popular in the 1970s and 1980s of broadening the idea of recurrent education for adults.

The European Commission (1995) defined lifelong learning in a very broad way:

> *Lifelong learning is a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require through their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances and environments.* (p.5)

The Education Ministers of member countries of the Organisation for Economic Co-operation and Development highlighted this theme when they declared:

> *Lifelong Learning will be essential for everyone as we move into the 21st century and it has to be made accessible for all.* (OECD 1996b, p.21)

As the OECD noted:

> *This new idea underpinning 'lifelong learning for all' goes beyond providing a second or third chance for adults and proposes that everyone should be able, motivated and actively encouraged to learn throughout life. This view of learning embraces individual and social development of all kinds and in all settings—formally in schools, vocational, tertiary and adult education institutions, and non-formally, at home, at work and in the community. The approach is system-wide; it focuses on the standards of knowledge and skills needed by all, regardless of age. It emphasises the need to prepare and motivate all children at an early age for learning over a lifetime, and directs efforts to assure that all adults, employed or unemployed, who need to retrain or upgrade their skills are provided with the opportunities to do so.* (1996b, p.15)

The OECD education ministers endorsed a policy framework for lifelong learning characterised by the following elements:

- strengthening the foundations for lifelong learning by improving the accessibility and quality of initial education
- improving the pathways and transitions between formal and non-formal learning and work over people's lifetimes
- rethinking and clarifying the roles and responsibilities of education and training authorities and institutions, community organisations, employers and trade unions in the education and training process
- creating incentives for individuals and enterprises to invest in lifelong learning
- monitoring progress towards achieving lifelong learning goals and evaluating the impact of measures to promote lifelong learning

This implies new roles and relationships for those concerned with education and training, as the OECD indicates:

> *Strategies for lifelong learning for all imply new roles and responsibilities for a wider variety of actors and stakeholders ... learners of various types, their families, teachers, social partners (employers and unions) and governments. There is a task for the partners in revisiting goals, curriculum, teaching and learning methods, as well as redefining governance and management.* (1996b, p.18)

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This wider view of lifelong learning was also evident in the Delors report of 1996 to the United Nations Educational, Scientific and Cultural Organization (UNESCO). Delors identified lifelong learning as the 'heartbeat of society' with lifelong learning being underpinned by four pillars. These are:

- learning to live together – *Developing an understanding of others and their history, traditions and spiritual values ...* [thereby creating] *a new spirit which, guided by our recognition of our growing interdependence and a common analysis of the risks and challenges of the future, would induce people to implant common projects or to manage the inevitable conflicts in an intelligent and peaceful way.* (p.22)
- learning to know – *Given the rapid changes brought about by scientific progress and the new forms of economic and social activity, the emphasis has to be on combining a significantly broad general education with the possibility of in-depth work on a selected number of subjects. Such a general background provides, so to speak, the*

passport to lifelong education insofar as it gives people a taste—but also lays the foundations—for learning throughout life. (p.23)

- learning to do – *In addition to learning to do a job of work, it should more generally entail the acquisition of a competence that enables people to deal with a variety of situations, often unforeseeable, and to work in teams, a feature to which educational methods do not at present pay enough attention. In many cases, such competence and skills are more readily acquired if pupils and students have the opportunity to try out or develop their abilities by becoming involved in work experience schemes or social work while they are still in education, ...* [with an] *... increased importance that should be attached to all methods of alternating study with work.* (p.23)
- learning to be – *In the 21st century everyone will need to experience greater independence and judgement combined with a stronger sense of personal responsibility for the attainment of common goals. Our report stresses a further imperative: none of the talents which are hidden like a buried treasure in every person must be left untapped. These are to name but a few: memory, reasoning power, imagination, physical abilities, aesthetic sense, the aptitude to communicate with others and the natural charisma of the group leader, which again goes to prove the need for greater self knowledge.* (p.23)

Delors also says:

> *Not only must* [lifelong learning] *adapt to changes in the nature of work, ... it must also constitute a continuous process of forming whole human* [beings'] *knowledge and aptitudes ... and the critical... ability to act.* (p.21)

At a conceptual level all this sounds good. As McKenzie (1998) points out:

> *Lifelong learning is clearly an idea whose time has come. What is not so clear is what lifelong learning actually means, and what policy notions may be necessary to bring it about … The very breadth of the lifelong learning concept is both a strength and a weakness. Almost anything could be considered to come within the lifelong learning ambit, but the lack of precision ...* [in the lifelong learning concept] *... makes it difficult to judge whether progress is being made.* (pp.1–2)

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A key development in the evolution of the lifelong learning concept was made in October 1997 when OECD labour ministers endorsed the concept as being central to their portfolios (OECD 1997). The lack of lifelong learning was seen as being a critical contributor to low earnings and unemployment. Lifelong learning was recognised as being a central feature of strategies designed to facilitate structural adjustment through the acquisition of new skills and to promote skilling to take advantage of new technologies.

The lifelong learning concept gained considerable popularity in various national policies such as in the United Kingdom which launched their new policy—*The learning age: A renaissance for a new Britain*—in 1998 (Secretary of State for Education and Training 1998). This followed major reports on the need for lifelong learning in Britain such as Dearing (1997) and Freyer (1997).

Growing international interest in the concept of lifelong learning has culminated in the release of 'The Köln Charter' by G8 countries and spells out the aims and ambitions for lifelong learning. The communiqué, released in June 1999, states:

> *The challenge every country faces is how to become a learning society and to ensure that its citizens are equipped with the knowledge, skills and qualifications they will need in the next century. Economies and societies are increasingly knowledge-based. Education and skills are indispensable in achieving economic success, civic responsibility and social cohesion.*
>
> *The next century will be defined by flexibility and change: more than ever there will be a demand for mobility. Today a passport and ticket will allow people to travel anywhere in the world. In the future, the passport to mobility will be education and lifelong learning. This passport to mobility must be offered to everyone.*
>
> (Köln Charter, *Aims and ambitions for lifelong learning*, http://www.g8cologne.de/01/00141/index.html, 19 June 1999)

The concept of lifelong learning was also the central theme of the UNESCO second international congress on technical and vocational education held in Seoul in 1999. As reported in Robinson (1999b), the main theme of the congress was 'lifelong learning and training for all' with a focus on how to ensure that the education and training systems of nations are able to meet the changing demands of work in the twenty-first century through the provision of education and training throughout life.

Australia has also given considerable emphasis in recent years to the concept of lifelong learning. In fact official policy recognition in Australia of the need to greatly expand the coverage of Australia's education and training system beyond entry-level training began as early as the late 1980s with the release of the *Skills for Australia* policy. It was stated in the policy document that:

> *The quality of Australia's future workforce skills will not only depend on the basic education and initial vocational preparation of young people. It is essential also to develop and continuously upgrade the skills of the adult workforce.*
>
> (Commonwealth of Australia 1987b, p.8)

The National Board of Employment and Training (NBEET) released a major report in 1996 on lifelong learning which focussed on the contribution lifelong learning can make to enhancing work skills and the employability of people (NBEET 1996).

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McKenzie (1998) has argued that:

> *Lifelong learning is an all-embracing concept that encompasses personal, social and economic objectives, and national policy debates generally reflect the multiple dimensions involved. However... a focus on the links between lifelong learning and employability seems ...* [most] *... appropriate.* (p.1)

McKenzie (1998) also argued that, while in some other countries the thrust of the debate has been on citizenship and life skills, Australia is one of the countries where emphasis in the lifelong learning debate has placed an emphasis on skills' training and re-training to improve employability and economic competitiveness. It is certainly this focus which gives the concept its critical importance. Lifelong is a much more tangible concept if seen as the driver of employment-related skills' formation policies.

The lifelong learning concept is now given very considerable importance in Australia. Australia's new national policy for vocational education and training, endorsed by Australian ministers for training, states that:

> *Changes in the markets for Australian products and services, industry restructuring and technological change have all contributed to a growing acknowledgment that people need to upgrade and update their skills throughout their working lives.*
>
> (ANTA 1998b)

The policy—*A bridge to the future: Australia's national strategy for vocational education and training 1998–2003*—assigns lifelong learning as one of its central themes (ANTA 1998b).

The recent West report (1998) into higher education in Australia focused on learning for life. Its central recommendations revolved around the adoption of student-centered funding and a relaxation of current restrictions on universities to charge fees. This, argued West (1998), would provide the basics for Australia to become a learning society in which all Australians, from all social, cultural or economic backgrounds, have access to a post-secondary education of excellent value. It is arguable whether the key West recommendations would achieve this objective, but the focus of the report on lifelong learning is unequivocal.

The Australian Minister for Education, Training and Youth Affairs, Dr Kemp stated:

> *There is little doubt that the nations which will succeed in the 21st century will be the 'knowledge societies'—societies rich in human capital, effective in their capacity to utilise and deploy their human resources productively and successful in the creation and communication of new knowledge. In such a world there will need to be greater opportunities than ever before for lifelong learning—for preparation not just for the first job but for succeeding jobs.* (Kemp 1999)

Dr Kemp also stated that:

> *Australia is in the process of putting into place a world-best practice training system which is very flexible particularly in the opportunities it offers for reskilling … Flexibility in vocational education is the key to ensuring Australians have access to lifelong learning. It is also important to help older Australians reskill for a changing economy.* (See the interview of Dr Kemp reported in Dickins 1999, pp.6–7.)

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The concept of lifelong learning is now well entrenched in contemporary Australian policy debate relating to post-compulsory education and training. Its evolution is described more fully in McKenzie (1998), (1999); Kearns (1999); Ryan (1999) and Watson (1999).

3.3 Participation in post-compulsory education and training in Australia

It is difficult to determine the extent to which the Australian population is already engaged in continuous or lifelong learning activities.

Watson (1999), when recently reviewing the evidence concerning the extent to which Australia has become a lifelong learning society, concluded 'Australia appears well on the way to becoming a learning society' (p.1).

She went on to say:

> *Although Australia has experienced a recent decline in total participation in education and training, 72.4 per cent of the working age population participate in lifelong learning. The main concern in Australia is to assist the remaining 27.6 per cent of the population to become lifelong learners.* (p.9)

Robinson and Arthy (1999) observed that:

> *There is considerable evidence, on the surface at least, that there is already an extensive 'training culture' in Australia. Most medium and larger enterprises in Australia provide some kind of training to their employees—spending over $4 billion annually on training. Over 80 per cent of employed people receive some kind of training from their employers. Nearly 1.5 million Australians enrol in a publicly funded vocational education and training program each year. The real question is how to turn all this activity into a genuine learning or training culture where continuous learning and new skills become the drivers of our economic future.* (p.vi)

Some aggregate and crude indicators of the extent to which people aged 15 years or more are engaged in lifelong learning are given in table 2.

From table 2 we can see:

- Over 77 per cent of the *economically active* component of the Australian population aged 15–64 years is either still at school or has undertaken some form of education and training in the past year.
- Some 80 per cent of wage and salary earners aged 15–64 undertook some form of training in the past year.
- Over 60 per cent of all employers provide some kind of training to their employees each year.

This is not to say, however, that this represents an adequate level of skills' formation in Australia. These data capture the full range of education and training experiences, ranging from short periods of unstructured on-the-job training to lengthy formal education and training courses.

The national participation rates of the population aged 15 years or more in formal schooling, vocational education and training and higher education, gives a clearer picture of the extent of participation in formal education training courses and programs. As shown in table 2, the national participation rates in 1998 were:

- 4.4 per cent in schools
- 10.4 per cent in vocational education and training
- 4.5 per cent in higher education

More detail about the types of education and training undertaken by the 77.3 per cent of economically active Australians aged 15–64 years is given in table 3.

Table 2: Aggregate indicators of the extent of lifelong learning in Australia

Indicator	Proportion of total (%)
Proportion of Australia's economically active component of the 15–64-year-old population who undertook some form of education and training in the past 12 months, 1997	77.3
Proportion of wage and salary earners aged 15–64 years who undertook some form of training in the past 12 months, 1997	80.0
School participation rate, 1998[a]	4.4
VET participation rate, 1998[a]	10.4
Higher education participation rate, 1998[a]	4.5
Proportion of employers providing some form of structured and/or unstructured training and education to their employees in the past 12 months, 1997	61.0

(a) Participation of persons aged 15 years and over as a proportion of the total population aged 15 years or more.

Sources: Australian Bureau of Statistics (1998a), (1998b), (1999) and various issues of Catalogue No. 3201.0; Department of Education, Training and Youth Affairs (1999) and National Centre for Vocational Education Research (1999)

Table 3: Type of education or training undertaken by the economically active component of the population aged 15–64 years, 1997

Category of education or training undertaken in the past 12 months[a]	No. of people ('000)	Proportion of economically active 15–64-year-old population (%)
Enrolled to study in a qualification	1 484.9	14.3
In-house training course	2 599.2	25.0
External training course	1 920.1	18.5
On-the-job training	6 277.3	60.4
Still at secondary school	6 46.5	6.2
Participated in at least one form of education or training	8 040.3	77.3
No training undertaken	2 354.9	22.7
Total economically active component of the 15–64-year-old population	10 395.2	100.0

(a) Some persons undertake more than one form of education and training.

Source: Australian Bureau of Statistics (1998a)

The economically active component of the population aged 15–64 years includes all those people who:

- were in the labour force by way of being employed or unemployed but actively seeking work
- were marginally attached to the labour force by way of being about to commence active job search
- had held a wage or salaried job in the previous year
- were in full- or part-time education and training, including those still at school

This group comprised some 10.4 million people in 1997 of whom over 8 million (77.3%) participated in some form of education and training.

The largest category was on-the-job training which was undertaken by 6.3 million people (60.4%). (Note that some people participated in more than one type of education or training.) Of the other main categories:

- 25.0 per cent undertook an in-house training course with their employer
- 18.5 per cent did an external training course
- 14.3 per cent enrolled to study in a course leading to a formal qualification
- 6.2 per cent were still at school

Turning to the participation in formal education and training by people aged 15 years or more (table 4) we can see that:

- nearly 660 000 young people (mostly teenagers) are still at school
- over 1.5 million people are enrolled in vocational education and training programs
- over 670 000 people are enrolled in higher education courses

Unstructured training refers to:

> *training activity that does not have a specified content or predetermined plan. It includes unplanned training that is provided as the need arises and training activity that is not monitored such as self-training through reading manuals or using self-training computer packages.* (Australian Bureau of Statistics 1998b, p.66)

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Thus about 20 per cent of the entire population aged 15 years or more are enrolled in formal programs (table 4). Almost 90 per cent of young people aged 15–19 years are participating in formal education and training courses, as are over one-third of all 20–24-year-olds. Some 20 per cent of 25–29-year-olds and some 15 per cent of people in their thirties are enrolled in formal programs. Around 12 per cent of those in their forties are also participating in such programs. Although the participation rates of older people have risen markedly in recent years in Australia, only 6 per cent of those in their fifties are participating in formal programs, with very low levels of participation at older ages.

Table 4: Participation in formal education and training in Australia by people aged 15 years and over, 1998

Age (years)	No. of students/trainees ('000)				Proportion of population[a] (%)			
	Schools[b]	VET[c]	Higher[d] education	**Total**	Schools	VET	Higher education	**Total**
15–19	654.2	335.8	181.4	**1171.4**	49.7	25.5	13.8	**89.0**
20–24	4.2	260.1	220.4	**484.7**	0.3	19.1	16.2	**35.6**
25–29	0.0	193.4	90.7	**284.1**	0.0	13.1	6.2	**19.3**
30–39	0.0	333.2	105.6	**438.8**	0.0	11.5	3.6	**14.8**
40–49	0.0	255.1	57.2	**312.3**	0.0	9.4	2.1	**11.5**
50–59	0.0	116.6	14.5	**131.1**	0.0	5.7	0.7	**6.4**
60–64	0.0	20.1	1.6	**21.7**	0.0	2.7	0.2	**2.9**
65+	0.0	21.0	0.5	**21.5**	0.0	0.9	0.0	**0.9**
Total	**658.4**	**1535.2**	**671.9**	**2865.5**	**4.4**	**10.4**	**4.5**	**19.3**

(a) Includes the number of students/trainees enrolled in each section in 1998 as a proportion of the June 1998 population.

(b) The 20–24-year-old category includes all school students aged 20 years or more, as almost all of these were aged 20–24 years.

(c) Includes the small number of VET students aged under 15 years.

(d) 2116 higher education students are aged 60 years and over, but the age split between those aged 60–64 years and those aged 65 years and over was not available. Thus for the purposes of this report 1600 have been included in the 60–64 category and 516 in the 65 and over category.

Sources: Australian Bureau of Statistics (1998a), Australian Bureau of Statistics Catalogue No. 3201.0 various issues, Department of Education, Training and Youth Affairs (1999) and National Centre for Vocational Education Research (1999)

Table 5: Employers providing structured and/or unstructured training in the last 12 months, 1997

Size of enterprise	Employers providing training (%)	Employers not providing training (%)	All employers (%)
Small business sector			
1–4 employees	45	55	100
5–9 employees	74	26	100
10–19 employees	86	14	100
Total small business (1–19 employees)	57	43	100
Medium-sized enterprises			
20–99 employees	94	6	100
Large enterprises			
100 or more employees	99	1	100
All enterprises	**61**	**39**	**100**

Source : Australian Bureau of Statistics (1998b)

Turning to the issue of employer-provided training, some 61 per cent of Australian enterprises provide training to their employees each year.

Most or all firms of medium-to-large size are involved in training provision to their employees (table 5). This includes the provision of both structured and unstructured training to employees. Structured training refers to:

> *all training activities which have a predetermined plan and format designed to develop employment-related skills and competencies. It consists of periods of instruction, or a combination of instruction and monitored practical work. The instruction can take the form of workshops, lectures, tutorials, training seminars, audio visual presentations, demonstration sessions or monitored self-paced training packages. It can also include structured on-the-job training.* (Australian Bureau of Statistics 1998b, p.66)

However, the provision of training by small businesses is far less prevalent, especially by those enterprises with fewer than five employees where 55 per cent of such micro-businesses provided no training at all.

Robinson (1999c) found that:

> *a widespread training culture is prevalent amongst large enterprises, whether they are private businesses or public sector organisations. Most medium-sized enterprises also provide some kind of training to their employees. The same cannot be said for small-sized enterprises, particularly micro-businesses.* (p.1)

3.4 Investment in education and training

Another key issue to consider is the extent to which our current national investment in education and training is adequate for meeting our future skills requirements.

Total investment in education and formal training in Australia has grown, in real terms, from just over $A23 billion in 1991–92 to almost $A30 billion by 1996–97, as shown in table 6. This includes steady growth in government outlays, averaging over 4 per cent each year. However, more significant has been the even faster growth in investment from private sources, averaging around 10 per cent per annum between 1991–92 and 1996–97.

This represented an investment of some 5.7 per cent of gross domestic product (GDP) on education and formal training in Australia by 1996–97 as shown in table 7. This proportion fell from 5.9 per cent in the early 1990s to 5.6 per cent by 1995–96 before rising to 5.7 per cent by 1996–97. Relative government outlays fell from 5.1 per cent of GDP to 4.7 per cent of GDP by 1995–96, and have since risen to 4.8 per cent of GDP in 1996–97. On the other hand, net private outlays rose from 0.8 to 0.9 per cent of GDP over the 1990s.

Also shown in table 8 is that nearly two-thirds of all public expenditure on education and formal training is for primary and secondary education. The university sector accounts for almost 25 per cent, while public expenditure on vocational education and training and other non-university tertiary education is some 13 per cent of the total.

Table 6: Total national investment in education and training[a], 1991–92 to 1996–97

Year	Government outlays ($A billion)	Private expenditure[b] $A billion)	Total value investment ($A billion)
1991–92	19.9	3.2	23.1
1992–93	20.9	3.5	24.4
1993–94	21.3	3.8	25.1
1994–95	22.1	4.0	26.1
1995–96	23.0	4.4	27.4
1996–97	24.5	4.8	29.3

(a) Includes investment from public and private sources in schools, universities and vocational education and training, and student assistance grants to individuals.

(b) Net private outlays which is gross private outlays less private outlays financed by governments.

Source: Australian Bureau of Statistics (1998c)

Table 7: Expenditure on education and formal training in Australia as a proportion of GDP, 1991–92 to 1996–97

Year	Proportion of gross domestic product %		
	Government outlays	Private expenditure	Total national expenditure
1991–92	5.1	0.8	5.9
1992–93	5.1	0.8	5.9
1993–94	4.9	0.9	5.8
1994–95	4.8	0.9	5.7
1995–96	4.7	0.9	5.6
1996–97	4.8	0.9	5.7

Source: Australian Bureau of Statistics (1998c)

Table 8: Government outlays on education and training in Australia, 1996–97[a]

Sector	$A (billion)	Proportion of total public expenditure on education (%)
Primary and secondary schooling	13.9	62.1
Vocational education and training	3.0	13.4
Higher education	5.5	24.5
Total	**22.4**	**100.0**

(a) Government outlays includes all outlays on education, including vocational education and formal training by the Commonwealth Government and State and Territory governments and universities. It includes outlays financed from the HECS repayments collected by the Australian Taxation Office, but government outlays do not include fees of other students in universities, up-front HECS payments made directly to universities, VET fees paid directly to institutes, private school fees, fees paid directly to public schools or any other institutional revenues from private sources.

Source: Australian Bureau of Statistics (1998c)

This includes a total expenditure by governments of over $A22 billion (table 8) broken up as follows:

- nearly $A14 billion on primary and secondary education
- some $A3 billion on vocational education and training—and other non-university tertiary education
- $A5.5 billion on higher education

Over 80 per cent of total education and training funding is provided by government with the remainder coming from revenue generated from fees and other payments which are paid by students, their families, or employers or from private donations, etc. This is shown in table 9. It is also interesting to note that the direct government funding of education and training institutions represents some of 11.4 per cent of all public expenditure in Australia. This is around the average for OECD countries.

From table 10 we can see that expenditure per equivalent full-time student in vocational education and training in Australia in 1995 was slightly above the OECD average. On the other hand, funding levels per student in primary and secondary education and universities were slightly below the OECD average. Overall, Australia's spending on education and training in 1995 was similar to OECD average spending levels.

Table 9: Source of funds spent on education and training institutions in Australia, 1995

Sector	Public sources	Private sources	Total
Primary and secondary education	87.0	13.0	**100.0**
Tertiary education and training	73.0	27.0	**100.0**
Total	**82.0**	**18.0**	**100.0**

Source: OECD (1999)

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Table 10: Expenditure per student on education and training, 1995[a]

Sector	Australia ($US)	OECD average ($US)
Primary education	3 121	3 595
Secondary education	4 899	4 971
Non-universities tertiary	7 699	7 447
Universities	11 572	12 018

(a) Based on full-time equivalents.
Source: OECD (1999)

Notwithstanding some of the trends over the 1990s, the level of investment in education and training puts Australia in the group of countries who spend between five and six per cent of their total GDP on education and training, which is a comparatively high level of investment in education and training (table 11). Countries spending similar relative amounts as Australia include Germany, Spain, Mexico, Austria, Portugal, New Zealand, Malaysia and Brazil.

Table 11: Total expenditure on education as a proportion of gross domestic product, 1995[a]

Country	Proportion of GDP (%)	Country	Proportion of GDP (%)
Very high levels of investment (6% or more)			
Israel	8.3	United States	6.7
Denmark	7.1	Finland	6.6
Canada	7.0	France	6.3
Norway[b]	6.8	South Korea	6.2
Sweden	6.7		
High levels of investment (5–6%)			
Germany	5.8	Portugal	5.4
Czech Republic	5.7	Ireland	5.3
Spain	5.7	New Zealand[b]	5.3
Australia	5.6	Iceland	5.2
Chile	5.6	Poland[b]	5.2
Mexico	5.6	Malaysia	5.1
Austria	5.5	Belgium[b]	5.0
Hungary	5.5	Brazil[b]	5.0
Moderate levels of investment (4–5%)			
Netherlands	4.9	United Kingdom[b]	4.6
Italy	4.7	Thailand[b]	4.3
Japan	4.7	Argentina	4.1
Lower levels of investment (less than 4%)			
Greece	3.7	Vietnam[b]	2.7
Russian Federation[b]	3.4	India	2.6
Paraguay[b]	3.1	Turkey	2.4
Philippines[b]	3.0	China[b]	2.3
Singapore[b]	3.0	Indonesia[b]	1.3
Uruguay[b]	2.7		

(a) Total expenditure from public and private sources on education institutions (schools, vocational education institutions, universities and other tertiary education institutions) except where otherwise stated.

(b) Direct public expenditure on educational institutions only.

Sources: OECD (1999) and Lenahan et al. (1998)

However, Australia is not investing in education and training at a level high enough to put it amongst those countries with the very highest levels of commitment to education and training. These countries include Israel, the Scandinavian countries, Canada and the United States, France and South Korea (table 11).

On the other hand, Australia's investment in education and training significantly exceeds the national investment in education and training in the United Kingdom, Japan, Italy, the Netherlands, Thailand and Argentina (table 11). Moreover, countries with even lower levels of investment in education and training (that is, less than 4% of GDP) include China, Singapore, the Philippines, Vietnam, India, Indonesia, Greece, Russia and Turkey (table 11).

In addition to the national expenditure on education and training institutions, a further $A4.7 billion is invested by business enterprises and public sector organisations in the training and skills' upgrading of their workforces (see table 12). This represents an average on training spending per employee each year of $A740, and some 2.5 per cent of the total payroll in Australia being spent on training by employers.

The evidence reported in table 12 also shows that annual increases in total employer expenditure on training averaged 2.3 per cent between 1993 and 1996. However, annual decline in expenditure per employee was evident in Australia between 1993 and 1996.

Table 12: Enterprise investment on structured training in Australia

Total training expenditure, 1996 ($A billion)	4.7
Expenditure per employee, 1996 ($A)	740.0
Training hours per employee, 1996 (hours)	19.6
Proportion of payroll spent on training, 1996 (%)	2.5
Annual growth in total enterprise expenditure on training (1993–96)	2.3
Annual change in enterprise expenditure on training per employee (1993–96)	-1.0

Source: Annual figures derived from Australian Bureau of Statistics (1997)

4 Future directions in skill formation

4.1 The need for new learning pathways and new learning options

THE ANALYSIS IN this report leads to two key conclusions concerning the future direction of education and training provision in Australia.

First, we need to ensure that all post-compulsory education and training becomes highly committed to and adept in imparting the generic skills which are becoming so essential across the whole labour force, and in particular in the new jobs emerging as a result of the information age.

New concepts of essential skills for the workplace are encouraging. Proficiency and competency in the technical, para-professional or professional skills of a job alone will not be a sufficient skill base for most jobs in the future.

It is no longer sufficient for universities to think of themselves as the suppliers of certain professional skills for the workforce, in a limited number of traditional disciplines. And the overwhelming focus in vocational education and training on competency in current and immediate basic and middle-level skills of a technical or para-professional nature is destined to become increasingly outmoded as emerging workforce requirements place increased emphasis on generic skills. These new forms of workplace knowledge will need to be given much more prominence in higher education programs and vocational education and training packages than in the past. In the future new curriculum and learning materials will be required in order to cover a much broader range of workplace-relevant content in higher education and vocational education and training programs.

The second key conclusion is that we need to overhaul the provision of post-compulsory education and training to cater more adequately for the vastly increased amount of adult learning that will be required; strategies to further the development of lifelong learning will also need to be established.

Just as we have developed pathways designed to improve the transition from school to work or from school to further and higher education and training for young people (for instance see the recent study by Misko [1999] for a description of these youth pathways), we now need to turn our attention to the further development of 'adult pathways'.

In reality this means breaking down the divide and the barriers currently existing between work and formal learning so that they become seamless, indistinguishable and continuous endeavours for the whole population throughout their lifetimes. Very creative options quite different from many of our current practices will be needed if we are to make the adjustment to nurturing the skills and talents of older Australians—to the extent of our current attempts for those entering the workforce for the first time. There is much to be done here given the level of discrimination towards older people in the workforce as described in Smith (1999a).

So much of our current approach is based on the assumption that our main learners are entry-level clients requiring long bouts of initial education and training. This has meant the predominant focus in post-compulsory education and training in Australia has been on full degree or diploma programs undertaken by full- or part-time students.

The logistics of developing new education and training programs more capable of facilitating continuous and rapid learning in the new skills will require a very different and more diverse approach with new learning options and pathways. This will necessitate:

- education and training programs that change continuously as the new skills required in the workforce change
- the development of new education and training programs and learning styles geared to meeting the particular needs of older learners, many of whom will already be employed and who already have entry-level qualifications

We will need:

- universal systems of articulation of learning to the national Australian Qualifications Framework (AQF) that genuinely transcend existing institution and sector barriers
- much more highly developed cross-sectoral approaches to seamless assessment, credit transfer and recognition of prior learning in order to facilitate learning by people who choose to combine elements from programs in universities or vocational education and training, and who choose their learning offerings from within any part or parts of the Australian post-compulsory sector and/or from overseas institutions. Learners and employers will increasingly need to have a major say in the content of the learning undertaken. The nature and content of learning cannot be left only for institutions and sectors to determine
- greatly enhanced ways of recording the learning that takes place, and packaging it into qualifications if desired; for example, through recognised national learning records or skills passports which record the formal learning people undertake and successfully complete over their lifetimes
- funding arrangements capable of facilitating rather than inhibiting learning mobility between sectors, that strike a balance between the need to fund institutions that provide high-quality programs and the need for much more flexible learning provision based on individual learning requirements. The

experience in vocational education and training with user choice arrangements provides a model that is worth exploring in a wider context here

In terms of encouraging much greater adult participation, the development of modularisation of the curriculum in vocational education and training has proven to be a highly successful strategy. In shifting the focus from qualifications requiring long periods of learning within a given period to that of a more continuous learning approach, serious consideration should be given to ways to 'modularise' university curriculum.

4.2 Increasing investment in skills and knowledge

Australia entered the twenty-first century in a reasonably sound position in relation to the total level of investment in education and training. In comparative terms, only a few countries, mainly in Scandinavia and North America, are devoting a higher proportion of their GDP to education and training than is Australia. As we saw in section 3.4 above, even though public funding is growing in all sectors, we have experienced in the 1990s in Australia, a declining level of public expenditure on education and training as a proportion of GDP. However, this has been to some degree offset by a rising proportion of GDP for education and training from private sources. The Higher Education Contribution Scheme, fees and institutional revenues from investments have had their effect here.

However, there is no room for complacency.

Even though we have seen modest growth in overall levels of national investment in education and training and reasonable growth in spending per student in Australia's schools and universities, a particularly disturbing trend in the early-to-mid-1990s period has been the marginal decline in expenditure per trainee in the vocational education and training sector and in the level of investment in training per employee by Australia's enterprises. This has occurred at a time when the priority on vocational education and workforce skills certainly needs to be much higher.

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If Australia is to not only maintain but improve its relative position as a leading skills' nation, which we must do to maximise our economic potential, then national investment in education and training needs to rise in real terms in the long term.

The combined pressures of globalisation and rapid technological change are revolutionising the nature of work and signalling its requirement for continuous new learning and skilling at a rate never before experienced in human history. This, coupled with the rapid ageing of the Australian workforce and its implications for a greatly enhanced national effort in skill formation, makes it very clear that our national investment in this area will need to rise.

This does not mean, however, that the burden should just fall on government and taxpayers. A truly national response is required. Yet we cannot reach the levels of national investment required without halting the slide in overall public

expenditure on education and training as a proportion of GDP that we saw in the first half of the 1990s. Indeed, the slight rise in public expenditure as a proportion of GDP in Australia in 1996–97 is heartening—but this has not yet become a sustained trend.

Just as important is the development of new ways of increasing investment from private sources, particularly from individuals and business, to extend even further the rates of improvement in national investment in education and training from private sources.

In terms of increasing individual contributions Chapman (1998) has raised the issue of broadening an income-contingent repayment scheme (along the lines of the Higher Education Contribution Scheme) to include vocational education and training.

Chapman (1998) argued that:

> *HECS arrangements for higher education offer a solution to the financial market problems inherent in charging for VET. In contrast the up-front fee regimes in Australian VET are poor policy, for both economic and social reasons. Attention should be given to moving VET charging mechanisms more towards income-contingent repayment, which means centralising the collection of charges through the Australian Taxation Office.* (p.43)

Chapman went on to say:

> *It should be noted that the case for making VET charging arrangements more consistent with HECS is becoming more urgent, for two reasons. The first is that TAFE charges are increasing, and are likely to continue to rise, exacerbating the basic access problem. The second is that credit transfers between VET and higher education systems exist (and are growing), meaning that equivalent education units can be purchased at prices and through mechanisms which are very different. These tensions will continue to grow, implying that existing arrangements are not sustainable.* (p.43)

Another interesting concept has been raised by Levin (1998) in considering the issue of how to finance lifelong learning. Levin (1998) suggests an all-encompassing approach to the financing of individual access to lifelong learning, irrespective of the institution, household or workplace where the learning takes place.

This could take the form of a loans scheme or a national lifelong learning fund (like national unemployment insurance or superannuation funds), rather than being linked to a specific sector such as higher education as is currently the case in those countries hosting such standard loans schemes.

This raises the possibility of developing a genuinely cross-sectional HECS-type scheme in Australia, to help finance lifelong learning, rather than creating yet another model for the VET sector.

This is an issue that requires serious consideration even though some of the technical barriers arising from complex Commonwealth–State arrangements are formidable. There are even more fundamental reasons for the extension of HECS-

type schemes to other sectors than equity reasons outlined by Chapman (1998). They relate to the need to further expand our national skills' formation systems, for the compelling reasons outlined in this report, and it is difficult to see how this can be done to the degree necessary by relying on the public purse and taxpayers alone. Users will need to make a greater contribution; feasible, fair and equitable ways to accomplish this must be identified. The experience with the Higher Education Contribution Scheme shows that such a mechanism could have wider application.

This is not to suggest that the burden of increasing national investment in skills' formation ought to fall only on individuals. Enterprises also need to make an increased contribution. In terms of raising the level of enterprise investment in Australia, Robinson (1999c) has shown that the approach of applying a compulsory levy—the Training Guarantee Scheme—actually had very little impact on the overall level of training by business in Australia. Robinson, when reviewing the impact of the Training Guarantee, which required firms with a payroll over $226 000 to spend 1.5 per cent on training or pay a levy to the government, specifically found that:

> *Organisations with more than 100 employees maintained their training effort during the life of the Training Guarantee. More importantly their commitment to training has grown since the Training Guarantee was abolished … a long term trend of declining training incidence amongst small business was not halted by the Training Guarantee … all training indicators point to little change in the commitment by medium-sized enterprises over the life of the Training Guarantee.* (Robinson 1999c, pp.11–12)

Smith (1999b) has argued that it is only through the development of a training culture at the enterprise level that a genuine improvement in the acquisition of meaningful skills in the workplace can be achieved. Smith (1999b, p.79) identified the elements necessary for a training culture at the enterprise level to emerge and thrive as:

- *strategic alignment* of the business strategy with human resource development initiatives
- *enterprise workplace innovation* so that new technologies are introduced in an integrated way with new training initiatives
- *steady and predictable employee relations* so that an enterprise culture promoting training for the individual is an integral part of the enterprise environment
- *positive management attitudes* so that training and skills are highly valued by the enterprise
- *supportive industry arrangements* that help not hinder the development of a training culture at the enterprise level

For these reasons, voluntary programs aimed at increasing enterprise commitment to training through better integration of training with corporate objectives are likely to have more effect. Robinson (1999c) argued that programs such as Britain's 'Investors in People' initiative should be seriously explored in the Australian context.

Investors in People is a voluntary scheme whereby employers take the decision to examine their business operations to achieve the four national standards of an Investor in People employer. If these standards are achieved, then an employer is awarded the Investor in People status, and is able to promote their business using the Investor in People logo. The system works in a similar way to the ISO 'quality-endorsed organisation' classification, but with a focus on high-quality skill formation. The scheme is outlined in more detail in Robinson (1999c, pp.13–16).

The key point is that only a small budget was required to establish a support and monitoring unit and, with a concerted national effort to promote the scheme, the British Government was able to directly engage over 30 000 enterprises, covering one-third of the workforce, in a national effort to increase their commitment to quality training at the enterprise level. This impressive achievement occurred in a five-year period.

An 'Australian grown' version of this approach warrants serious consideration.

Some of the issues concerning investment by individuals and enterprises in skill formation are also discussed in Burke et al. (1999).

Clearly, the issue of what options might be considered to finance increased investment in education and training in Australia is a significant one, and one which will require even more attention in the coming years.

5 Conclusions

THE RAPIDLY CHANGING nature of the workforce and the profound shifts in the structure of our population have significant and profound implications for the way we need to think about the provision of post-compulsory education and training over the coming decades.

The creation and subsequent provision of genuine and practical structured learning pathways for people, irrespective of their age, will not be an easy task and will require the evolution of new systems to record and package people's learning, irrespective of where the learning took place—in a university or in the vocational education and training sector—and irrespective of whether it took place in a recognised program in or out of Australia. In turn this will mean the evolution of genuinely consistent, national assessment and learning recognition arrangements which cut across sectors so that the individual's learning can 'seamlessly' accumulate and articulate into national qualifications.

Most important of all, if we are to develop learning pathways for adults as well as for young people, will be the reform of traditional higher education provision so that adults can gain access to the professional skills provided by universities in much more flexible and accessible ways. This means a focus on modules rather than on full qualifications, and the development of a modularised system of provision along the lines of that already operating in the vocational education and training sector. Such modularisation has already proven to be the key to much greater levels of participation in learning by adults, especially employed adults, many of whom are unable to make an immediate commitment to a full course leading to a qualification. All learning (that is, modules) should, of course, articulate to full AQF qualifications.

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It is difficult to see how these changes can be accommodated without an enhanced level of national investment in education and training—despite the fact that successive governments have provided a very sound national foundation for resourcing our education and training systems in relative international terms. The end of the twentieth century saw Australia amongst those countries with a relatively high commitment to education and training. Increasing our national investment does not mean that the burden should fall on governments alone. Greater contributions will be needed from individual users and enterprises.

Anticipating the level to which our total national investment in education and training should rise to enable Australia to maximise its economic competitiveness will be a complex task. It is clear that we will need to do more, but quality, relevance, flexibility and responsiveness in our skills' formation system is likely to depend just as much on reform of existing education and training systems and achieving efficiencies within them, as on the total quantum of financial resources. Yet it is clear more investment will be needed if we are to become a leading-edge skills' nation—as we must. An appropriate benchmark for total investment might be to raise Australia's position to that of the world's leading economies in terms of national investment in skills and knowledge. This means raising investment, from public and private sources, from just under six per cent of GDP to at least seven per cent of GDP over the next 10 to 20 years.

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